



# MIDDLE TENNESSEE CHAPTER NEWSLETTER

November/December  
2007  
Vol. 2, Issue 11

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## Next Meeting

**What: Topic TBD**

**When:** Thursday, January 24, 2008 11:30 am-1:00pm

**Where:** Tennessee Engineering Center, Adventure Science Center, 800 Fort Negley Blvd., Nashville, TN 37203

**Cost:** Chapter members, \$15. Non-Members, \$20. Lunch will be served.

**RSVP:** RSVP's ARE REQUIRED. Details TBD.

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## Notes from the Chair

- Mike Leonard



On December 7, 2007, the Chapter leadership met at the Ezell Building on the Lipscomb University campus in Nashville to hold our annual retreat. We met together with new and leaving Board members to discuss the great things we have to look forward to in 2008! Special thanks to newly elected Board member Dodd Galbreath and Lipscomb University for making this venue available for our use.

Aside from meeting together with newly elected members of the Board, the annual retreat is a time to elect the following officer positions: Chair, Vice-Chair, Secretary, Treasurer and Southeast Region Delegate.

I am humbled to have been elected to the Chair position for another 1 year term. I am excited to build upon the momentum that our Chapter has gained in 2007 and look forward to continued progress and promotion of sustainable design principles in the Middle Tennessee area!

Build Green. Everyone Profits.

Mike Leonard

We welcome the following returning Board members and those newly elected in November:

*Mike Leonard, Thomas, Miller & Partners (re-elected)*  
*Fernando Rodriguez, Turner Universal Construction Co. (returning)*  
*Laura Schroeder, Hawkins Partners (returning)*  
*Erik Lund, Hastings Architecture (returning)*  
*Ann Olsen, Vanderbilt Center for Environmental Management Studies (returning)*  
*Ken Scaff, Architectural Energy Corporation (returning)*  
*Erik McKinney, American Constructors, Inc. (newly elected)*  
*Tracey Ford, Everton Oglesby Architects (newly elected)*  
*Dodd Galbreath, Lipscomb University (newly elected)*  
*Ed Wansing, Gould Turner Group (newly elected)*

The Board elected the following officers for 2008:

*Board Chair: Mike Leonard*  
*Vice-Chair: Fernando Rodriguez*  
*Secretary: Tracey Ford*  
*Treasurer: Erik McKinney*  
*Regional Delegate: Eric Lund*  
*(Regional Delegate: Ann Olsen, continuing term)*



On behalf of the entire Chapter leadership, I want to extend my appreciation to those who are "taking a break" from the Board of Directors in 2008;

*Steve Grant\*, Trane*  
*Mark Smith\*, Gobbell Hays Partners*  
*Dan Huitt\*, McFarlin Huitt Panvini*  
*Ralph Velasquez, Tremco, Inc.*

\* Founding Chapter Board Member



# Letter from Regional Chair - Sara O'Mara

## Board of Directors

Mike Leonard  
- Chair

Fernando Rodriguez  
- Vice Chair

Laura Schroeder  
- Secretary and Resource Development Chair

Erik Lund  
- Treasurer and Finance Committee

Ann Olsen  
- Regional Delegate & Communications Chair

Ken Scalf  
- South East Regional Council Delegate

Ralph Velasquez  
- Public Policy & Advocacy Co-Chair

Mark L. Smith  
- Public Policy & Advocacy Co-Chair

Dan Huitt  
- Programs Co-Chair

Steve Grant  
- Board Member

## Additional Leaders

Gina Emmanuel  
- Programs Co-Chair

Michelle Fox  
- Membership Chair

Ed Wansing  
- Emerging Green Builders Chair

## Editorial Staff

Winston Huff  
- Newsletter Editor

Clark Denson  
- Managing Editor

Brandi Sanders  
- Graphic Designer

John Lattimore  
- Copy Editor

Update from November 6 Chapter Day and Member Day at Greenbuild 2007 in Chicago:

It is my pleasure to inform you that out of the Southeast Regional Council, our chapters won Four Chapter Awards. Middle Tennessee won the Advocacy Award in the small chapter arena. South Carolina won in the small chapter category for Community, and the Charlotte Region won two Chapter Awards: one in LEED for small chapters and one in Education for small chapters. There are currently over 70 chapters in USGBC, and there were 36 submissions for the chapter awards. Congratulations to all of you! All of your hard work paid off.

Here are a few other items that came out of today's meeting:

LEED Residential Website: [www.greenhomeguide.org](http://www.greenhomeguide.org)

LEED for School Website: [www.greenschool.org](http://www.greenschool.org)

The New Board of Directors to USGBC:

- Anthony Bernheim for the At Large position
- Elizabeth Whalen for the Building Product Manufacturing category
- Elizabeth Heider in the contractor/builder sector
- Dennis Malosky for the State and Local Government position

The Green Building Certification Institute will administer the LEED AP program as of January 2008 instead of USGBC. That website is [www.gbci.org](http://www.gbci.org)

Thank you,

Sara O'Mara

Southeast Regional Council Chair



USGBC President/CEO Rick Fedrizzi (center) presents the Advocacy Award to Mike Leonard and Erik Lund.



# 2007 TN Waste Green Tie Gala Review- Betsy Clapsaddle

Held on Saturday, October 20 at City Hall, the TN Waste Green Tie Gala was an exciting evening of entertainment and celebrations. Great measures were taken to make this a "green" event including serving local wine, providing an organic dinner, recycling waste, composting food leftovers and utilizing reusable centerpiece vases filled with edible organic fruit. The event was complete with an intellectual speaker, a silent auction, and an amazing local band. Approximately 160 green-minded attendees gathered at 6:30 pm, and the festivities continued until 12:00 pm!

## Susan Knows Green

Susan S. Szenasy, a successful author, professor and enthusiast of great design, discussed "The Many Shades of Green: An Armchair View of the Movement." Currently, Szenasy is the Editor in Chief of Metropolis Magazine where she often features the best of green design and development. The presentation included a wide range of projects that have made significant strides in green building.



## The Silent Auction Was a Hit!

In its debut to the Gala, the silent auction featured over 50 donated treasures. The variety of items ranged from a bottle of wine, an NPT video, jewelry made by local artisans to green services provided by local professionals. Highlights include: a membership to an organic CSA (Community Shared Agriculture) provided by Andrew Habegger, an organic Mennonite farmer who delivers a share of his harvest each week was valued at \$475, a beautiful side table constructed of green materials from Urban Décor was valued at \$350 and BioBased spray foam insulation provided by Energy & Environment, LLC was valued at \$750. The silent auction was a great success raising approximately \$3500 for our local chapter!

## Green Stars

Chapter president Mike Leonard presented the following Green Star Awards to local leaders who have represented the mission of the USGBC Middle Tennessee Chapter and have served to promote the principles of sustainable design and construction:

### Green Star Award: Educational Contribution

Mark West

For his unyielding promotion of the LEED Homes Rating System and willingness to serve as an educational resource for the Chapter

### Green Star Award: Residential Contribution

Lawrence Brothers

For excellence and devotion to high performance sustainable building practices in Middle Tennessee

### Green Star Award: Commercial Contribution

Crosland Development

For leadership and promotion of sustainable building practices in private sector development projects

### Green Star Award: Individual Contribution

Mike Jameson

For his unrelenting efforts leading to the adoption of legislation requiring LEED Silver Certification for public buildings in Metro Nashville

### Green Star Award: Corporate Contribution

Tennessee Waste

For providing a service that helps projects in Middle Tennessee meet construction waste recycling goals, and for a continuing support of the USGBC Chapter

### Guilty Pleasures Leaves the Crowd Wanting More

The Gala was not complete without Guilty Pleasures, a local cover band specializing in the hits that we all remember from the 80's, give or take a decade or so! The band is very popular and the performance for the USGBC lives up to their reputation. Many of the attendees stayed to dance and sing along with the diverse and entertaining ensemble until they would not play anymore!

### Recognition and Appreciation

This event could not have been possible without the following leaders within our chapter:

Eric McKinney, American Construction (Event Chair)

Laura Schroeder, Hawkins Partners

Allison Marusic, Hawkins Partners

Gina Emmanuel, Centric Architecture

Jill Alexander, Weston Solutions

Jeff Earwood, Thomas Miller Partners

Betsy Clapsaddle, Buchart Horn, Inc.





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Dolan Geiman	Stacy Mitchart Entertainment	TN Waste
Mary Glesige	The Mulch Company	Tremco
The Office of Al and Tipper Gore	Nashville Autohaus	Turner Universal
Energy and Environment LLC	Nashville Office Interiors	Urban Décor
exoTerra Solutions	Nashville Public Television	Whole Foods
Fjord Design	Nashville Scene	Wilmot, Inc.

Composting services for the event provided by EarthMatters

## Committees.Membership.Benefits: Why USGBC Middle Tennessee Chapter Membership Has Doubled This Year - Michelle Fox

**Our Mission.** The U.S. Green Building Council – Middle Tennessee Chapter is a not-for-profit organization made up of Building Industry Professionals, Facility Managers, and Property Owners in Middle Tennessee and surrounding communities whose mission is to be an advocate for a sustainable Tennessee. Members work together to provide educational and networking opportunities for individuals who are passionate about sustainable building.

**Chapter Membership Sets You Apart.** Join the USGBC – Middle Tennessee Chapter and see how chapter membership can give you a competitive edge and connect you to a world of resources you can't find anywhere else. Everyone is encouraged to join the USGBC – Middle Tennessee Chapter. Your membership in the chapter provides an unparalleled opportunity to influence change and help shape the future of green building in the Middle Tennessee area.

**It Pays to Become a Member.** As a USGBC – Middle Tennessee Chapter member, you will receive discounts for our networking and educational events. Any interested party is welcome to attend USGBC events.

**The People You Will Meet.** As a chapter member, you will make invaluable contacts, share information and best practices, and build relationships with leaders and professionals representing a broad spectrum of industries. Our chapter members - the people who design, construct, manage, finance, insure, and occupy buildings - share a common focus: a commitment to transforming the built environment toward one that is profitable, healthy, and environmentally responsible.

**Advocacy.** As a chapter member, you will have the opportunity to shape the local agenda through chapter and committee leadership. USGBC – Middle Tennessee Chapter members play a vital role in promoting green policy initiatives affecting issues like energy conservation, air quality, and livable communities - hot topics among federal, state and local governments. By getting the word out and building relationships to promote green building, your chapter membership is even more valuable.

**Visibility.** Your chapter membership will give you recognition as a leader in supporting a better built environment. As a national member, you can proudly display the USGBC Member Logo on promotional materials to let clients and customers know about your commitment to sustainability.

**How You Can Join Us.** Become a USGBC Middle Tennessee Chapter, and see how membership can give you a competitive edge and connect you to a world of resources you can't find anywhere else.

Dues are: \$50 for a Full Member (individual works for a USGBC member company)

\$65 for an Associate Member (individual doesn't work for a USGBC member company)

\$25 for an EGB Membership (student or young professional who doesn't work for a USGBC member company)

You can sign up by going online at (<http://chapters.usgbc.org/middletn/membership.html>) or contacting our Membership Chair Michelle Fox at (<mailto:mafox-1@hotmail.com>).



# A Vote for Water Conservation - Dual-Flush Water Closets - Part 1

## -Winston Huff

How is a toilet stall like a voting booth? In the privacy of the toilet stall, dual-flush water closets enable informed users to vote for or against water conservation as they pull the lever because they allow users to choose how much water they want to use when they flush.

In response to the growing demand for water-efficient plumbing fixtures, manufacturers are providing new dual-flush water closets to the market. These fixtures have a different flushing mechanism than conventional water closets, so users will need some training on their use. This first article will discuss how to use this new technology and the second article will cover some of the new products on the market.

### How Does This New Voting Machine Work?

Simple, dual-flush water closets have two methods of flushing. Option one will flush the same 1.6 gallons of water as the conventional water closet. The intent of a dual-flush water closet, however, is to use the full-flush option only when flushing solid wastes out of the bowl. Option two, the unique feature of dual-flush fixtures, uses a lower amount of water than the full 1.6-gallon flush. For most units the reduced amount of water is 0.8-1.1 gallons per flush. The intent of this flush is to clear liquid wastes out of the bowl.

This dual-flush approach requires some education. Several universities are conducting informal studies on the user response to these fixtures. According to their findings, the majority of users like the idea of having an option to choose the low-flush option. Other formal studies are needed, however, to see if the low-flush option actually will be used. In public toilets users may not notice the dual-flush feature or may not know how to use it without instructional signage. In contrast, employees at an office building who use the same toilet every day will become accustomed to the fixtures, and it is predicted that people in such a situation will use the low-flush feature when they can.

### What Types of Dual-flush Water Closets Are Available?

Gravity dual-flush tank water closets have been available for the residential market for several years. Kohler, Caroma USA and Toto USA offer fixtures in which the bowl and flush tank are designed to handle both full- and low-flush options. There is little or no premium in the cost of these dual-flush water closets when compared to conventional fixtures. (Please note that this article will not list every manufacturer that makes these fixtures. The intent is to introduce the concept of

dual-flush water closets. Check with other manufacturers to see what is available.)



The EPA has established a new program similar to the popular Energy Star program called WaterSense™. They have a very helpful website that lists manufacturers and model numbers at (<http://www.epa.gov/watersense/index.htm>).

Pressure-assisted water closets are now available with the dual-flush technology. Some of the major manufacturers are making pressure-assisted dual-flush units that meet ADA requirements and have elongated bowls. Pressure-assisted units have developed over time in reliability and functionality.

One of the newest items on the market, the dual-flush meter valve, was just installed here at Smith Seckman Reid. The basic concept is that these flush valves look and operate similar to the current valves, but they give the user the dual-flush option. These valves operate the 1.6-gallon flush when pushed to the down position, just as on typical valves. Moving the valve up, however, operates the low-water-usage flush. Labeling for the lever and wall-mounted signage are available to instruct the user about the up and down operation of the valve (see Figure 1). Sloan Valve Co. and Zurn Plumbing Products among other manufacturers have introduced this product, and upgrade kits are available to change standard flush valves to dual-flush valves.

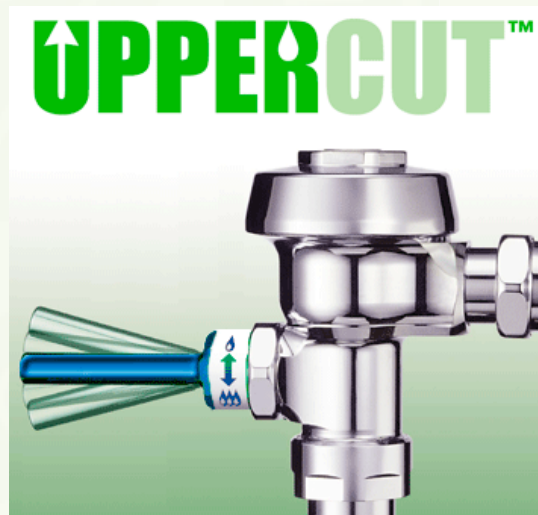


Figure 1. Labeling on dual-flush water closets allow users to vote for or against water conservation. (Photo courtesy of Sloan Valve Company)

### Local Statistics:

Middle Tennessee Chapter Members	385
Middle Tennessee Accredited Professionals	232
Middle Tennessee Certified Projects	2
Middle Tennessee Pre-certified Projects	1

### Registered Tennessee LEED projects (As of April 10)

New Construction	40
Existing Building	2
Commercial Interiors	3
Core and Shell	7



# Wet Weather Springs and Other Misconceptions

## - Barry Westbrook

Storm water infiltration can destroy a building over time and make an otherwise sustainable design un-sustainable. We receive hundreds of calls each year from homeowners and real estate professionals complaining about water infiltration. In almost every case the caller has no clue about the cause. The best guess is usually that there is some kind of wet weather spring that has suddenly appeared out of nowhere to wreak havoc upon the hapless homeowner. Is this really an unforeseen calamity that has nothing to do with an otherwise well-designed drainage system? Not likely.

Wet weather springs are not the problem. In most residential subdivisions there is no integrated drainage design for the individual homes. In this situation bad things are bound to happen: wet basements and crawlspaces, mold, and dry rot. Sometimes problems manifest themselves immediately, but more often the homeowner begins to notice the symptoms weeks, months, or even years after construction. One thing is for sure, these drainage deficiencies are not accidents but predictable outcomes of bad design.



Sadly, these problems are often compounded by erroneous solutions. The list is long, but two of the most preposterous ideas are exposed here.

1. **Build a moat** – If you think of your home as your castle, you can dig a deep trench next to the foundation, install a perforated plastic pipe, and fill the trench with gravel. This will invite all the storm water in the neighborhood to come right up to your foundation wall. You have just constructed a moat for your castle.

You say, “No problem. I have the pipe in the trench to drain the water away once it reaches my moat.” I say two things: 1) the pipe will deteriorate and fill with debris in short order, and 2) for the water to drain, there must be some standing water to drive the flow. (Remember Hydraulics 101?)



So what you have actually done is pay someone thousands of dollars to destroy your landscaping and make the problem permanent. Believe it or not, there is a huge industry installing these systems all over the country.

2. **Invite the water into your home** – Maybe even worse than the moat idea is to install a trench inside the foundation wall to collect the infiltration and pump it away. We call this the NeverDry System. (Get it?) There are a number of problems with this one, but probably the most

offensive from a building science perspective is the constant erosion around the foundation as we encourage perched ground water to flow into the building. Other problems include the creation of direct conduit for the infiltration of radon and moisture. The sump surrounding the perimeter of the basement is also a haven for mold, bacteria, insects, and other vermin.

So what is the right way to fix a water infiltration problem? The obvious answer is to design the storm water management system correctly and integrate it into the construction of the building. From our experience, this would eliminate 90% of homeowner complaints and save untold millions of dollars in often counterproductive repairs.

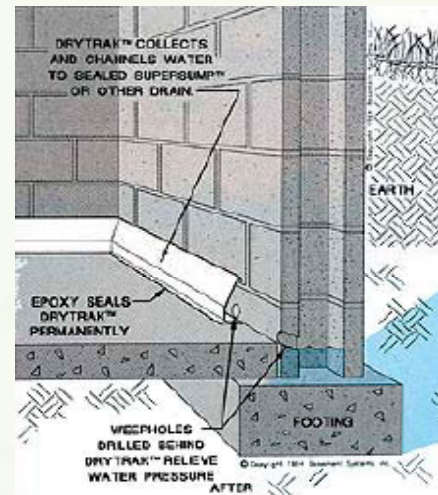
There are four basics that, if followed, will practically guarantee a water-proof home:

1. Install the proper size gutters and the appropriate size and number of downspouts.
2. Keep the gutters free of debris.
3. Get the water from the downspouts away from the foundation and keep it away.
4. Install clay or an equivalent water retardant material next to the foundation.
5. If there is a regional flow of water toward the building, install a curtain drain well away from the foundation so that water never reaches the building wall.

Finally, it should be stressed that sub-standard drainage is not just an issue in residential construction. Some of the same misguided principles are at work in commercial construction as well.

If we want to create sustainable structures, we must remember that old thing about the definition of insanity. Regardless of what anyone says, whatever we are doing today is not working very well. The key to overcoming bad habits is to forget how we have done it in the past and evaluate what really makes sense. The payoff comes in longer-lasting, healthier buildings and fewer headaches from trying to repair problems that never should have occurred.

Barry Westbrook  
DocAir LLC  
4014 Flagstone Court  
Franklin, Tennessee 37069  
Phone 615-373-2498  
bwestbrook@docair.com



**Come on in. The water's fine.**



## Looking into the Crystal Ball

### How public power utilities are planning to reduce energy consumption and carbon emissions as the need for electricity continues to rise- Laurie Parker

Seattle is a city that seems to be ahead of the curve when it comes to “thinking green.” Maybe it’s a West Coast thing or that residents draw inspiration from the breathtaking views of Mt. Rainer. Either way, utility companies like Seattle City Light are way ahead of the game in educating customers about energy conservation and practicing what they preach.

City Light has been a leader in reducing the effects of greenhouse gas on climate change. They were the first electric utility in the nation to be greenhouse gas neutral - and one of the first utilities to use energy conservation as a resource.



Utilities across the country are realizing the crucial importance of addressing electricity technology in a carbon constrained world. So much so, that it was a central theme of the conference I just attended, the American Public Power Association’s Annual Customer Connections Conference in Seattle on October 28-31.

According to the Electric Power Research Institute (EPRI), energy efficiency will play a big role in the climate issue. Without a climate policy, EPRI predicts that our electric power requirements will grow by about 40% between now and the year 2050.

One culprit is the shift that is predicted in residential electricity consumption within the next 30 years. Televisions and other electronics will make up approximately 13% of a homeowners energy use, up from 9% in 2005. One easy quick fix for homeowners is to replace all incandescent bulbs with compact fluorescents (CFLs). If every U.S. household made the switch, it would reduce energy consumption by 3.7%.

According to EPRI, the electric system of the future should call for smart metering, renewables like wind and solar generation, an efficient building system, smart appliances and plug-in hybrid vehicles (PHEV). Plug-in hybrids significantly reduce the use of motor fuels. A midsize SUV consumes over 600 gallons of gas per year compared to a PHEV that only uses just over 250 gallons. A joint study with the National Press Club in Washington, D.C. shows that PHEVs improve air quality and reduce greenhouse gas emissions in all regions of the country.

But, the truth of the matter is that a lot has to happen to a) levelize the cost of electricity and b) reduce CO2 emissions. The Electric Power Research Institute has designed two models or electricity technology scenarios to address these issues – a full or limited portfolio.

	Full Portfolio	Limited Portfolio
<b>Supply-Side</b>		
Carbon Capture and Storage (CCS)	Available	Unavailable
New Nuclear	Production Can Expand	Existing Production Levels
Renewables	Costs Decline	Costs Decline Slower
New Coal and Gas	Improvements	Improvements
<b>Demand-Side</b>		
Plug-in Hybrid Electric Vehicles (PHEV)	Available	Unavailable
End-Use Efficiency	Accelerated Improvements	Improvements

With the full portfolio, nuclear energy plays a big role in electric generation. The objective being that by 2040, the vast majority of electricity supply is CO2 free. The limited portfolio relies more on natural gas which has half the CO2 of coal. The other key element is that electricity load must go down in order to meet the carbon emissions target.

Nashville Electric Service will continue to make energy conservation a priority as we work to educate our customers on ways to reduce their consumption and their energy costs. The Tennessee Valley Authority is also committed to the cause. TVA has called for an expansion in its energy efficiency initiatives, which includes \$22 million for the first phase of a renewed emphasis on energy efficiency and reduction in peak power demand.



# Phantom Loads Revealed

## - Laurie Parker

When it comes to home entertainment systems, consumers aren't just watching the latest blockbuster movie or hit television show. They're watching their power usage hit the big time as well.

Try it at home. Turn on your cable box, the HDTV, the surround-sound system, the TiVo, the DVD player and the Xbox or PlayStation. While you are at it, power up your computer, too. Your electric meter has shifted into high gear.

Traditional appliances such as refrigerators and water heaters have become much more energy efficient in recent years. High definition TVs and all the accessories are the new energy hogs. Take for example a set-top cable box that consumes 30 watts of power. Its annual energy

consumption is enough to operate a refrigerator for 6 months. Plasma TVs use about three times as much as regular televisions. And, the worst part is, many of these new electronics continue to use energy even after they've been turned off.

It's what we call phantom load. In the U.S., approximately 43 billion

kilowatt hours of electricity is wasted as the result of this continuous, low-level energy use. For the average homeowner, that translates to about \$28 per year. Any device that can be turned on with a remote control is consuming electricity because it is waiting in standby mode for a signal from the remote. Any device that has a clock, such as a microwave or cable box, is adding to phantom load.

Cable boxes and digital video recorders (DVRs) are the worst offenders. DVRs such as TiVo often sit with their hard drives spinning even when they are turned off. And, don't forget about your phone or laptop charger. Those bulky power packs use energy whether an electronic is plugged in or not. If it is warm, it's wasting electricity.

### Finding Phantom Loads

Turn off all lights at night and look for any LEDs or other glows in the house. A gas stove that uses an electric clock constitutes phantom load.

### Working Around these "Energy Vampires"

- Unplug the appliance or use a power strip and switch it off when the appliance is not in use.
- Unplug cell phone chargers or laptop batteries when not in use.
- When buying new appliances, look for the Energy Star label.
- If possible, choose an appliance without a built-in clock or timer. It can use enough energy to run a compact fluorescent light bulb continuously for 10 hours.
- Turn off your computer and monitor when not in use.



## Local Happenings

### DECEMBER

**What:** Green Advantage Environmental Certification Workshop for Contractors

**When:** Monday, December 17th, 2007, 8 AM to 5 PM

**Where:** AGC of Tennessee – Middle Tennessee Branch, 2924 Foster Creighton Dr., Nashville, TN 37204

**Cost:** \$450 (includes exam cost, see below)

**Registration:** Dan Ackroyd with PBG Builders, Inc.

by phone: 615-543-2314 (direct line) or 615-517-4476 (cell) or email: [DAckroyd@pbgbuilders.com](mailto:DAckroyd@pbgbuilders.com).

For more info, visit [www.greenadvantage.org/Nashville12-17-07.php](http://www.greenadvantage.org/Nashville12-17-07.php)

**What:** Green Advantage Environmental Certification Exam for Contractors

**When:** Thursday, December 20th, 2007, 10 AM to 12 PM

**Where:** AGC of Tennessee – Middle Tennessee Branch

2924 Foster Creighton Dr., Nashville, TN 37204

**Cost:** \$450 (included in workshop cost, see above)

**Registration:** Dan Ackroyd with PBG Builders, Inc.

by phone: 615-543-2314 (direct line) or 615-517-4476 (cell) or email: [DAckroyd@pbgbuilders.com](mailto:DAckroyd@pbgbuilders.com).

For more info, visit [www.greenadvantage.org/Nashville12-17-07.php](http://www.greenadvantage.org/Nashville12-17-07.php)

### JANUARY

**What:** USGBC Chapter Meeting (Topic TBD)

**When:** Thursday, January 24, 2008 11:30 am-1:00pm

**Where:** Tennessee Engineering Center, Adventure Science Center, 800 Fort Negley Blvd., Nashville, TN 37203

**Cost:** Chapter members, \$15. Non-Members, \$20. Lunch will be served.

**RSVP:** RSVP's ARE REQUIRED. Details TBD.

Would you like to:

- be a member?
- be an accredited professional?
- register and certify your building?

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